Claims:

1. An optical communications terminal, comprising:
an optical telescope;
a transmitter unit including at least one transmitter coupled to source of optical signals;
a receiver unit for receiving optical signals;
an optical system defining a transmit optical path between the optical telescope and the transmitter unit, and defining a receive optical path between the optical telescope and the receiver unit; and a beacon detector for detecting beacon optical signals received at the optical telescope;
characterised in that a beacon optical path between the optical telescope and the beacon detector comprises at least a portion of said transmit optical path and/or said receive optical path.

2. The terminal of claim 1, wherein the transmitter unit, receiver unit and beacon detector are disposed at or adjacent the focal plane of the optical telescope.

3. The terminal of claim 1 or 2, wherein the optical system includes a relay lens and a first mirror, and the optical path between said first mirror and the optical telescope is common to the transmit optical path, the receive optical path and the beacon optical path.

4. The terminal of claim 3, wherein the optical system includes a beamsplitter between the first mirror and the receiver unit, the beamsplitter, in use, passing receiver optical signals along the transmit optical path to the receiver unit and reflecting beacon optical signals along the beacon optical path to the beacon.

5. The terminal of any of the preceding claims, wherein the transmitter unit includes a plurality of transmitters.

6. The terminal of any of the preceding claims, wherein for the or each transmitter an aperture is provided in the first mirror, a separate transmit optical path thereby being provided from the or each transmitter to the optical telescope via a respective aperture.

7. The terminal of any of the preceding claims, wherein the or each transmitter comprises the terminating portion of a single mode optical fibre, a collimating lens preferably being provided at said terminating portion in a respective transmit optical path.

8. The terminal of claim 5, and any claim dependent thereon, wherein each transmitter is fed by the

same optical signal.

9. The terminal of claim 5, and any claim dependent thereon, wherein each transmitter is fed by a different optical signal.

10. The terminal of claim 5, and any claim dependent thereon, wherein there are three transmitters.

11. The terminal of any of claims 4 to 10, wherein the beacon optical path includes a second focussing lens between said beamsplitter and the beacon detector.

12. The terminal of claim 11, wherein the beacon optical path includes a filter system between said second focussing lens and the beam detector, the filter system preferably including, in sequence, a filter passing a first predetermined frequency and a neutral density filter.

13. The terminal of claim 11, wherein the first predetermined frequency is 830nm.

14. The terminal of any of the preceding claims, wherein, the receiver unit includes one receiver for receiving optical signals at a second predetermined frequency, different to said first predetermined frequency, said second predetermined frequency preferably being 1550 nm.

15. The terminal of claim 14, wherein the receiver comprises a terminating portion of a multimode optical fibre.

16. An optical communications terminal, comprising:

an optical telescope;

a transmitter unit coupled to source of optical signals;

a receiver unit for receiving optical signals;

an optical system defining a transmit optical path between the optical telescope and the transmitter unit, and defining a receive optical path between the optical telescope and the transmitter unit; and

characterised in that the transmitter unit comprises a plurality of transmitters, each transmitter being coupled to a respective source of optical signals.

17. The terminal of claim 16, wherein for the or each transmitter an aperture is provided in the first mirror, a separate transmit optical path thereby being provided from the or each transmitter to the optical telescope via a respective aperture.

18. The terminal of claim 16 or 17, wherein the or each transmitter comprises the terminating portion of a single mode optical fibre, a collimating lens preferably being provided at said terminating portion in a respective transmit optical path.

19. The terminal of any of claims 16 to 18, and any claim dependent thereon, wherein each transmitter is fed by the same optical signal.

20. The terminal of any of claims 16 to 19, and any claim dependent thereon, wherein each transmitter is fed by a different optical signal.

21. The terminal of any of claims 16 to 20, and any claim dependent thereon, wherein there are three transmitters.

22. The terminal of any of claims 16 to 21, further including a beacon detector for detecting beacon optical signals received at the optical telescope.

23. The terminal of claim 22, wherein the transmitter unit, receiver unit and beacon detector are disposed at or adjacent the focal plane of the optical telescope.

24. The terminal of claim 22 or 23, wherein the optical system includes a relay lens and a first mirror, and the optical path between said first mirror and the optical telescope is common to the transmit optical path, the receive optical path and the beacon optical path.

25. The terminal of claim 24, wherein the optical system includes a beamsplitter between the first mirror and the receiver unit, the beamsplitter, in use, passing receiver optical signals along the transmit optical path to the receiver unit and reflecting beacon optical signals along the beacon optical path to the beacon.

26. The terminal of any of claims 22 to 25, wherein the beacon optical path includes a second focussing lens between said beamsplitter and the beacon detector.

27. The terminal of any of claims 22 to 26, wherein the beacon optical path includes a filter system between said second focussing lens and the beam detector, the filter system preferably including, in sequence, a filter passing a first predetermined frequency and a neutral density filter.

28. The terminal of any of claims 22 to 27, wherein the first predetermined frequency is 830nm.

29. The terminal of any of claims 22 to 28, wherein the receiver unit includes one receiver for receiving optical signals at a second predetermined frequency, different to said first predetermined frequency, said second predetermined frequency preferably being 1550 nm.

30. The terminal of claim 29, wherein the receiver comprises a terminating portion of a multimode optical fibre.

31. An optical free space communications system, comprising:

a first optical communications terminal, the first optical communications terminal being a terminal according to any of the preceding claims; and

a second optical communications terminal, the second optical communications terminal being a terminal according to any of the preceding claims;.

wherein the first optical communications terminal and the second optical communications terminal are arranged whereby, in use, the transmitter unit of the first optical communications terminal may transmit said optical signals to the receiver unit of the second optical communications terminal and the transmitter unit of the second optical communications terminal may transmit said optical signals to the receiver unit of the first optical communications terminal.